

LISTING OF THE CLAIMS

1. (Previously presented) A method of producing multiple transgenic wheat plants from a single explant comprising:

providing an explant presenting a plurality of meristems;

culturing said explant in a first multiple bud inducing media suitable for inducing production of a plurality of buds from at least one of said meristems;

introducing exogenous DNA into more than one of said plurality of buds;

removing said plurality of buds from said first media and transferring said plurality of buds to a second media suitable for induction of elongation of said buds into shoots;

harvesting and transferring said shoots to a culture medium that promotes root development; and

culturing said transferred shoots to produce multiple transgenic wheat plants.

2. (Currently amended) The method of claim[[s]] 1, wherein said multiple bud inducing media comprises a cytokinin and an auxin.

3. (Currently amended) The method of claim[[s]] 2, wherein said cytokinin is thidiazuron.

4. (Currently amended) The method of claim[[s]] 2, wherein the concentration of said cytokinin is between 2.0mg/L and 7.5mg/L.

5. (Currently amended) The method of claim[[s]] 2, wherein said cytokinin is thidiazuron and said auxin is selected from the group consisting of 2,4-D and picloram.

6. (Currently amended) The method of claim[[s]] 5, wherein the concentration of thidiazuron is between 2.0mg/L and 7.5mg/L and the concentration of auxin is between 0.5mg/L and 2.0mg/L.

7. (Currently amended) The method of claim[[s]] 1, wherein said plurality of meristems contains the scutellar node.
8. (Currently amended) The method of claim[[s]] 1, wherein said explant is a wheat mesocotyl explant.
9. (Currently amended) The method of claim[[s]] 1, wherein said exogenous DNA comprises a nucleic acid encoding a protein capable of conferring resistance to a selection agent.
10. (Currently amended) The method of claim[[s]] 9, further comprising a step of selecting for plants containing the protein conferring resistance to a selection agent.
11. (Currently amended) The method of claim[[s]] 1, wherein said exogenous DNA is introduced via biolistic particle bombardment.
12. (Currently amended) The method of claim[[s]] 1, wherein said exogenous DNA is introduced via *Agrobacterium*-mediated transformation.
13. (Previously presented) A method of producing multiple transgenic wheat plants from a single explant comprising:

providing a wheat mesocotyl explant presenting a plurality of meristems;

culturing said wheat mesocotyl explant on a first media, comprising thidiazuron at a concentration of between about 2.0 mg/L and 7.5 mg/L, and 2,4-D at a concentration of about 0.5 mg/L and 2.0 mg/L, to induce the production of a plurality of buds from at least one of said plurality of meristems;

introducing exogenous DNA into at least one of the cells of said plurality of buds;

removing said plurality of buds from said first media and transferring said plurality of buds to a second media suitable for induction of elongation of said buds into shoots;

culturing said shoots to produce multiple transgenic wheat plants.

14. (Previously presented) The method of claim 13, wherein said exogenous DNA is introduced via *Agrobacterium*-mediated transformation.
15. (Previously presented) The method of claim 13, wherein said exogenous DNA is introduced via biolistic particle bombardment.
16. (Previously presented) The method of claim 13, further comprising a step of selecting for plants containing the exogenous DNA.